REMARKS

Claims 1-3, 9-12, and 18-20 remain in the application. Claims 1, 10, and 18 have been amended, and claims 6-8, 15-17, 21, and 22 have been canceled in this amendment. Claims 4, 5, 13, and 14 were previously canceled.

In the Office Action mailed June 23, 2009, the Examiner rejected claims 1-3, 6-12, and 15-22 under 35 U.S.C. § 103(a) as obvious over previously cited Haub et al. in view of newly cited U.S. Patent No. 6,154, 641 ("Zhang") and further in view of previously cited Tokuda et al. ("Tokuda").

Applicant respectfully requests reconsideration and further examination of the claims.

Claim Rejections

Claim 1 has been amended to recite a method of reducing the effects of second order intermodulation distortion in a zero-IF receiver that comprises receiving an RF signal, modulating <u>and amplifying</u> the RF signal, and <u>then detecting</u> an occurrence of intermodulation distortion. This is followed by selectively enabling a wide mode of a wide-notch filter when certain conditions are met. Those conditions are defined as Eb/Nt < energy threshold and RSSI > minimum signal strength, and maintaining the wide mode enablement of the filter while either a decrease in RSSI exceeds a predetermined decrease or an increase in the Eb/Nt ratio exceeds a predetermined normal Eb/Nt ratio. Support for those features can be found in the specification as filed at page 5, lines 9-15 and lines 16-28.

In response to the amendment submitted with the RCE, the Examiner acknowledges that Haub and Tokuda do not address second order intermodulation. For this feature, the Examiner relies upon the Zhang reference.

The Zhang reference does mention reducing second order modulation, but it does so in a completely different manner than the present claimed embodiments. More particularly, the claimed method and receiver use an adjustable wide-notch filter, whereas Zhang describes using a "variable attenuator AT1 100" or, in the alternative, an automatic gain control (AGC) block that reduces the power of the input signal until the intermodulation component reaches an

acceptable level. This variable attenuator is not described in any detail. Because Zhang and Haub do not disclose the use of notch filters, the Examiner then relies upon Tokuda, which does describe using a notch filter for eliminating or suppressing "disturbing signals."

The Examiner appears to be using the claims as a guide to restructuring the Haub circuit, which is impermissible. Nowhere does Haub suggest a control circuit that adjusts a filter block. Rather, Haub's approach is to adjust the amplifier and mixer and to <u>leave the downstream filter alone</u>. Haub does not recognize a need to use an adjustable filter.

The configuration described by Zhang is similar to Haub in that power to the Zhang mixer is controlled via a first variable attenuator, and the power level of the post-mixer is adjusted via a second variable attenuator while the band-pass filter <u>is left alone</u>. Thus, structurally this combination does not teach or suggest any of the disclosed circuits or related method as set forth in the claims of the present application.

The Tokuda reference shows in Figure 8 and Figure 12 the use of a disturbing signal detection circuit or frequency-detecting circuit, respectively, that provides a control signal to the variable notch filter 105. The detecting circuit uses the output of the filter as an input, whereas Haub uses the output of the receiver back end as an input to the DSP controller. Moreover, Zhang uses a reference signal as an input. In contrast, the disclosed circuits of the present application use the output of the baseband processor and not the filter or a reference signal. Hence, the configuration recited in claim 1 recites a method that includes receiving an RF signal, then modulating <u>and amplifying</u> the RF signal to provide one or more baseband signals, <u>then</u> detecting an occurrence of intermodulation distortion. Thus, in the present claimed method, detecting of the occurrence of intermodulation distortion occurs after modulating and amplifying the RF signal. None of the references taken alone or in combination teach or suggest this sequence.

Moreover, in Haub, the DSP module 308 receives two signals as input, the RSSI1 and RSSI2. The DSP module 308 does not utilize or implement a signal-to-noise ratio signal. Moreover, Haub specifically teaches that the two RSSI signals are utilized in formulating a signal-to-crossmodulation interference ratio (SCMIR) (see column 7, lines 50-62) that is compared to an SCMIR threshold to determine whether or not to increase or decrease the

linearity of the receiver. Thus, Haub does not teach or suggest determining the presence of intermodulation distortion by using a combination of the RSSI and the Eb/Nt as set forth in claim 1. In addition, claim one recites maintaining the wide mode enablement of the filter when either a decrease in RSSI exceeds a maximum determined decrease or an increase in the signal-to-noise ratio Eb/Nt exceeds a determined normal Eb/Nt ratio. Again, none of the references cited and applied by the Examiner teach or suggest this step.

In view of the foregoing, applicant respectfully submits that claim 1 is clearly allowable over the combination of Haub, Zhang, and Tokuda inasmuch as these references when taken together neither teach nor suggest the combination recited in claim 1.

Dependent claims 2, 3, and 9 are allowable for the features recited therein as well as for the reasons why claim 1 is allowable.

Independent claim 10 is directed to a receiver that comprises a mixer receiving an RF signal and converting it to an analog baseband signal, an amplifier to amplify the baseband signal, and a detector that is configured to assert a detection signal when intermodulation distortion is detected in the amplified analog baseband signal. A wide-notch filter coupled to an output of the mixer and having an output coupled to an input of the amplifier is also recited having both a normal mode and a wide mode used to attenuate second order intermodulation distortion. Claim 10 further recites the detector configured to measure or detect intermodulation distortion using the steps similar to those recited in claim 1. Applicant respectfully submits that claim 10 is clearly allowable for the reasons why claim 1 is allowable. Moreover, Neither Haub, Zhang, nor Tokuda, taken alone or in any combination teach or recite the structure recited in claim 10 as well as the method implemented by the structure recited in claim 10, as further set forth in claim 10.

Applicant respectfully submits that claim 10 and dependent claims 11, 12, and 18-20 are allowable over the combination of references cited and applied by the Examiner.

In view of the foregoing, applicant respectfully submits all of the claims remaining in this application are in condition for allowance. In the event the Examiner disagrees or finds minor informalities that can be resolved by telephone conference, the Examiner is urged to contact the undersigned by telephone at (206) 622-4900 in order to expeditiously resolve

prosecution of this application. Consequently, early and favorable action allowing these claims and passing this case to issuance is respectfully solicited.

Respectfully submitted,

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